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**GUIDANCE ON MINIMUM COMMUNICATION NEEDS OF MARITIME  
RESCUE CO-ORDINATION CENTRES (MRCC)**

1 The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its third session (23 to 27 February 1998), noted that all existing IMO documentation on the GMDSS address only ships' requirements and provide no guidance for the establishment and operation of MRCCs with regard to communication facilities. Noting that MRCCs are a vital link to a ship in distress, the Sub-Committee prepared the guidance given at annex on the Minimum communication needs of Maritime Rescue Co-ordination Centres (MRCCs) to assist national authorities setting up a Maritime Rescue Co-ordination Centre by suggesting the basic communication facilities that should be provided.

2 Member Governments are invited to bring the annexed guidance to the attention of their SAR authorities for appropriate action.

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## ANNEX

### GUIDANCE ON MINIMUM COMMUNICATION NEEDS OF MARITIME RESCUE CO-ORDINATION CENTRES (MRCCs)

## 1 INTRODUCTION

### 1.1 General

The purpose of this guidance is to assist national authorities who envisage creating a maritime rescue co-ordination centre, by suggesting the basic equipment that an MRCC should possess and the minimum communications facilities that it should be able to provide.

This circular is only an introductory document which cannot replace the Organization's other relevant documents, (in particular Part 1 of chapter V of the IMOSAR Manual and chapter 4 of the International Aeronautical and Maritime Search and Rescue Manual - volume 1: Organization and Management) or the user guides for systems in use or the technical manuals for installed equipment.

### 1.2 Objective

In terms of communications, an MRCC should be capable of:

- .1 receiving distress calls by the most rapid means available (if possible directly from ships at sea) in their area of responsibility and acknowledge receipt<sup>1</sup>;
- .2 alerting and activating search and rescue facilities;
- .3 co-ordinating operations; and
- .4 receiving information from (and transmitting information to) any body or person concerned, including in the form of *maritime safety information*.<sup>2</sup>

## 2 ESSENTIAL FACILITIES

### 2.1 Telephone links

A connection to the general telephone network is essential. Depending on the centre's volume of activity, it may be desirable to have several lines. When the MRCC is incorporated into a larger complex (government building, naval base, harbour master's office etc), it is strongly recommended that the centre should have its own telephone lines, not going through a switchboard. In any case, the line whose number

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<sup>1</sup>In the case of alerts received by radio, the MRCC must acknowledge receipt such that the calling ship and all other ships concerned know that the MRCC has actually received the distress call and is dealing with it. The acknowledgement is generally made by the same system (but not necessarily on the same frequency or the same channel) as the one by which the distress call was received, except for COSPAS-SARSAT, where that is not possible. In the latter case, the most appropriate means is used.

<sup>2</sup>Depending on the areas involved MSI is transmitted either via the International SafetyNET Service (see 2.3 and 3.2) or by NAVTEX which is a dedicated MF NBDP system. NAVTEX transmitting stations can be accessed by fax or telex or any other means according to operational arrangements with the station. Due to the fact that a large number of vessels are not yet GMDSS equipped, MSI have still to be transmitted orally by HF, MF and VHF in certain areas.

is published to the public and in IMO documents to ensure that distress-calls come straight to the centre must go direct to the continuously manned operational centre.

An ordinary telephone line clearly allows contact with any telephone subscriber in the world. It also allows automatic access to a number of means of communication which allow contact with ships, such as the Inmarsat-A and B systems, provided that the characteristic number of the called ship is known.

## **2.2 Fax links**

A separate fax connection to the general telephone network is also essential for an MRCC in order to operate a fax machine. The usefulness of such a machine should be emphasized, since with a simple telephone line it allows instant written communication, which facilitates understanding between people who do not speak the same language. It is easier to translate a written text from a foreign language than to understand a speaker using the same foreign language on the telephone. Moreover, fax allows transmission of any sketch, drawing, map, etc.

It is possible to transmit faxes to or from ships equipped with Inmarsat-A, B or C ship earth stations.

## **2.3 Telex link**

A connection to the public telex network allows access to the Inmarsat-A, B and C systems which allows text conversations with an appropriately equipped ship. This equipment is mandatory for all ships subject to the SOLAS Convention in an A3 area, i.e. not covered by VHF or MF, if shipborne HF equipment is not installed. Messages via the International SafetyNET, the Inmarsat safety network, are also transmitted via Inmarsat-C. MRCCs are authorized (subject to registration as "information providers", see below) to transmit free of charge such messages which allow them to call all ships in a given area. A telex is thus necessary in an RCC covering an A3 sea area<sup>3</sup>.

## **2.4 VHF and MF with DSC**

If the government concerned so decides, A1 or A2 areas (i.e. covered by VHF or MF respectively) may be created along coasts, by setting up the necessary installations with digital selective calling (DSC). The MRCC normally keeps watch on VHF channel 70 and/or the frequency 2187.5 kHz MF. Alerts are received in written form (printer or screen).

Although this solution is less satisfactory, watch can however be kept by a radio station on behalf of the MRCC.

Either directly or via a radio station, the MRCC must be able to converse, by voice, VHF and/or MF as applicable, with the ships involved in search and rescue operations. The available frequencies must be at least VHF channel 16 and/or 2182 kHz MF (which must be monitored as soon as the centre receives an alert on channel 70 or frequency 2187.5 kHz). The availability of other channels or frequencies is recommended so as to have alternative channels or frequencies.

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<sup>3</sup>Unless the MRCC is linked to an X.25 data transmission network which also allows it to access the Inmarsat-C network.

## **2.5 Ordinary VHF**

The MRCC may cover an area close to the coast crossed by a large number of vessels equipped only with radio installations that do not meet GMDSS standards, such as ordinary VHF without DSC. It would therefore be useful in this case for the MRCC to be equipped (or have access to) radio installations which allow them to cover all or part of the area in question. In that case, it is recommended that watch should be kept by the MRCC (or a body which immediately informs it of alerts) on channel 16 (for the quoted example).

## **2.6 COSPAS-SARSAT and Inmarsat-E satellite alert systems**

Alerts coming from the COSPAS-SARSAT satellite system are transmitted to the MRCC by telex or fax either from an MCC (COSPAS-SARSAT mission control centre), or from a SPOC (SAR point of contact), or from another RCC<sup>4</sup>.

Distress alerts from ships equipped with Inmarsat-E EPIRBs are transmitted to MRCCs by certain Coast Earth Stations specially equipped to receive these alerts.

## **3 ADDITIONAL MEASURES TO BE CONSIDERED**

### **3.1 Special networks**

The authority responsible for setting up the rescue organization, in the light of the local context of the country concerned, should examine the possibility of linking, often quite cheaply, with existing networks (Administration, armed forces telephone networks), in particular the aeronautical fixed telecommunication network (AFTN), which provides the link with the aeronautical rescue organization.

### **3.2 Inmarsat-C ship earth station**

MRCCs that originate SafetyNET broadcast should be provided with an Inmarsat-C receiver or have another arrangement to monitor the broadcasts they originate to confirm that the messages are transmitted and received correctly.

## **4 ACTIONS TO BE TAKEN BY THE AUTHORITY RESPONSIBLE FOR SETTING UP AN MRCC**

### **4.1 Telephone, fax and telex links**

Obtain the necessary number of subscriber lines from the local network operator. Lease or buy the necessary equipment.

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<sup>4</sup>There are in the world a number of receiving stations (LUT) which receive satellite information and transmit it to COSPAS-SARSAT mission control centres (MCCs). Each of these centres is responsible for broadcasting alerts in areas of responsibility of several countries, which make up its *service area*. When in a particular country which does not have an MCC, there are several maritime and/or aeronautical rescue co-ordination centres, one of the RCCs is designated as the *SAR point of contact* (SPOC), and broadcasts to the various RCCs in the country.

If the country in question has not designated a SPOC (see 4.4.), it receives alerts from the RCC of the country where the nearest MCC is located, or, in any case, from the first RCC which received the alert and which must transmit it to the geographically relevant RCC.

## **4.2 Inmarsat links**

Contact the Chairman of the International SafetyNET Co-ordination Panel to ask him to prepare the certificates which will be issued so that the RCC can be considered as "information provider" and have access to the SafetyNET network for the purpose of search and rescue.

Ask the local Inmarsat operator in the country concerned about means of calling subscribers on the network.

## **4.3 VHF and/or MF radio**

Obtain authorizations to set up a radio station (or stations) from the competent national body. Buy and install the necessary equipment. Train the staff responsible for operating it.

Alternatively, conclude a contract with an operating agency able to provide the services in question.

It is recommended to arrange for each station to have several transmitter-receivers, or at least one specialized receiver to monitor the distress channel, while having the capacity to converse on another channel.

## **4.4 COSPAS-SARSAT<sup>5</sup>**

If the country concerned has already designated a SPOC, it is sufficient to provide internal data transmission procedures between the country's SPOC and the MRCC.

If the country concerned so wishes, it may designate the MRCC (or one of the MRCCs if it has several) as a SPOC to the COSPAS-SARSAT Secretariat<sup>6</sup> and to the MCC via which it wishes to be served. It will establish the procedures for broadcasting alerts with the MCC.

If it does not designate a SPOC, the country concerned may ask the MRCC of the country where the nearest MCC is located to transmit information to it (see note 3).

## **4.5 Additional means listed in section 3**

For special networks, contact the network operators. For an Inmarsat SES, contact the local Inmarsat operator and an equipment supplier.

## **5 MARITIME RESCUE SUB-CENTRES (MRSCs)**

Depending on the importance of a maritime rescue sub-centre (MRSC), the tasks assigned to it, the area covered, the degree of autonomy granted to it, the responsible authority may if appropriate reduce the equipment provided to it in relation to that described above.

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<sup>5</sup>Irrespective of the alert transmission procedures described in the text, the State concerned must also install a body to register emergency position-indicating radio beacons (EPIRB), which must be capable of being continuously interrogated. This body, which may be an MRCC, is called an SAR Data Provider SDP.

<sup>6</sup>COSPAS-SARSAT Secretariat, Inmarsat House, 99 City Road, London EC1Y 1AX, United Kingdom (telephone +44 171 728 1391; fax +44 171 728 1170)

With respect to connection to the general telephone network, one line for a telephone and one for a fax is a minimum.

## **6 JOINT AERONAUTICAL AND MARITIME RESCUE CENTRES (JRCC AND JRSC)**

Everything that is envisaged in this circular applies to JRCC (and if applicable JRSC, taking into account paragraph 5), subject to being complemented by means of communication specific to the aeronautical rescue organization.

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